

Management of Type 1 Diabetes With a Very Low-Carbohydrate Diet: A Word of Caution

The public often looks to nutrition to improve health, and reporting on nutrition findings from the scientific literature in the popular media often reveals unproven benefits.¹ Lennerz et al² present data collected via an online community and conclude that exceptional glycemic control in type 1 diabetes with a low risk for adverse events is possible with a VLCD, and research is needed to confirm the generalizability of these findings. Although it may be true that a VLCD can be useful, we find the study of Lennerz et al to fall well short of the level of scientific evidence that merits the media and professional attention it seems to have garnered. The online community was not a general type 1 diabetes community; rather, this was a community following a specific type of VLCD as promoted by the authors of 1 book. And of the estimated 1900 community members, only 493 responded to an eligibility survey, with 316 being included in analyses (17%) and 148 with confirmed medical data, representing only 8% of the community.² Of the small subset of participants with self-reported lipid concentrations ($n = 82$; 4% of the community), 62% had dyslipidemia,² which clearly is not desirable.

We suspect that only individuals who “believe” in the VLCD approach as promoted by the authors of the book would be in the community and respond to this survey. We can appreciate the effort made by the authors to confirm the diagnosis of type 1 diabetes, glycemic control (the hemoglobin A1c), and adherence to the diet; however, ultimately, those efforts pale in comparison with the problem of selection bias. Furthermore, respondents who report following the VLCD likely have other attributes that are likely contributors

to excellent glycemic control, such as careful monitoring of blood glucose (blood sugar) levels, meticulous attention to insulin administration, vigilant exercise management, etc, which can confuse or confound attribution of the VLCD to glycemic outcomes. Nutrition guidance for patients and families living with type 1 diabetes must be made on the basis of appropriate scientific evidence, not on what more closely resembles testimonials. We agree with the authors that VLCDs may confer benefits for some patients with type 1 diabetes and that rigorous science is needed on this topic. The problem we now face is that it is far too easy for the potential benefits and safety of VLCDs to be publicized broadly on the basis of this report because although findings were definitive, they could be used to potentially mislead the public and add to the substantial confusion that exists around whether VLCDs should be used in type 1 diabetes. Promulgating such methodologically weak although enticing data broadly through the media creates a risk that patients or providers may pursue such plans without adequate insulin adjustment, resulting in serious issues with hypoglycemia as well as risk for nutritional deficiencies without adequate monitoring because of the substantially reduced intake of fruits and vegetables while on the VLCD.^{3,4}

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